

**REMARKS****INTRODUCTION**

In accordance with the following, reconsideration of the allowability of the pending claims is respectfully requested.

Claims 1-20 are pending and under consideration.

**REJECTION UNDER 35 USC §103**

Claims 1-10 stand rejected under 35 USC §103(a) as being unpatentable over De Haan et al., U.S. Patent No. 5,657,401, in view of Suzuki et al., U.S. Patent No. 6,118,552, and further in view of Wittig, U.S. Patent No. 2004/0066468. This rejection is respectfully traversed.

In addition to the remarks presented in applicant's Response of March 10, 2008, applicants respectfully submit that there would not have been a reason why one skilled in the art would look to Suzuki et al. to change either of De Haan et al. or Wittig to perform a SAD between luminance average values of a present picture and a delayed picture.

It is further respectfully submitted that such a combination of De Haan et al., Wittig, and Suzuki et al. would not disclose the claimed invention, as Suzuki et al. has been misinterpreted or misapplied in the outstanding Office Action.

De Haan et al. sets forth a noise estimation system similar to the Background of the present invention, relying on a sum of absolute differences (SAD) between spatially (or potentially temporally) adjacent pixels. See De Haan et al. in col. 3, lines 4-10 and 16-33.

The SAD calculation is based upon each pixel value within a group of pixels, with De Haan et al. also indicating that the largest number of SAD calculations can be generated by each group including only a single pixel.

Regardless, at all times De Haan et al. only performs SAD on respective pixels of groups of pixels, e.g., between spatially or temporally adjacent groups. The SAD values are applied to a comparator with defined interval ranges, to determine whether the SAD falls within or outside the interval range. Thus, with regard to the interval ranges, De Haan et al. further explains that different intervals can be considered to find a preferable interval range having a lowest upper interval boundary.

Similarly, Wittig sets forth applying different interval ranges to SAD calculations of pixels within a single image, by simultaneously applying the SAD calculations to multiple

counters/comparator elements, each counter/comparator element has different comparator interval ranges. The counter with the lowest count above a minimum threshold will represent the thus most desirable interval range. See Wittig in paragraphs [0014]-[0016].

In Wittig, at no time is any lowest SAD calculation, second lowest SAD calculation, or second lowest counter always chosen.

Rather, the counter with the lowest count value, which exceeds a predetermined threshold is chosen and a corresponding image noise estimate corresponding to that corresponding interval range, is output as the estimated image noise. "In essence, each one of the counters is associated with one of the prospective noise estimate values by virtue of the counter's association with one of the comparator devices." See Wittig in paragraph [0013].

De Hamm similarly indicates that the counter value and comparator range corresponds to the ultimate estimated noise of the image.

Accordingly, a combination of De Haan et al. and Wittig would appear to only set forth a system similar to De Haan, except that multiple intervals can be reviewed at one time to identify the appropriate range represented by a counter with the lowest count, from all counter values that at least exceed a predetermined threshold, and corresponding estimated noise corresponding to an identified appropriate range associated with the identified counter.

Different from both De Haan et al. and Wittig, Suzuki et al. is unrelated to image noise estimation and is focused on image encoding.

The Office Action has indicated on page 5 that Suzuki et al. "discloses average luminance value (claim 9, 'average luminance component data value') a block average calculator dividing individual picture of an input image signal into blocks and calculating luminance values for a plurality of the divided blocks (Figs. 1-30, 'block division component' and 1-32, 'average value calculations component'; abstract; claim 9)."

However, this average luminance calculation and application within Suzuki et al. is unrelated to any noise estimation.

Rather, average luminance calculations of blocks within Suzuki et al. are used to determine whether a region of the image, and in particular pixel blocks of a region, correspond to color, monochrome, or background regions. Depending on which category an average luminance value of a blocks of pixels corresponds to, a different encoding would be applied.

Suzuki et al. in col. 6, lines 33-57, recites:

In the FIG. 1 is an image input component for reading an image from an original, converting it into each color component and outputting image data for each color component, 20 is a memory for storing the image data, 30 is a block division component for dividing the image data of each color component into pixel blocks which are rectangular regions consisting of  $m \times n$  pixels, wherein  $m$  and  $n$  are positive integers, 32 is an average data value calculation component for calculating the average data value of pixel block of each color component, 33 is a region determination component for determining to which region the block corresponds, color, monochrome or background, based on the average data value of the pixel block of each color component, 34 is a color region storing component for storing the color region determined by the result of the above determination, 31 is a selector for switching pixel blocks to be output and output destination corresponding to steps 1 or 2, 35 is a bi-level conversion component for switching bi-level conversion process of the pixel blocks **depending on the determination result**, 4 is a color image encoding component for encoding pixel blocks of the color region, 5 is a bi-level image encoding component for encoding pixel blocks converted by bi-level conversion, and 6 is a transmission control component for transmitting encoding result of every region with region information.

Thus, Suzuki et al. is directed to differently encoding pixel block data based upon the determined category the pixel block falls within, i.e., color, monochromes, or background. See Suzuki et al. in col. 7, line 48, through col. 8, line 27. Further, see Suzuki et al. in col. 9, lines 1-49.

Thus, the review of an average luminance of a pixel block, such as illustrated in Equation 1 in col. 7 of Suzuki et al., is for a particular reason unrelated to any noise estimation.

Suzuki et al. evaluates the luminance values merely to selectively encode the image data with a most appropriate encoding scheme.

Here, this disclosure of reviewing average luminance values of pixel blocks has no relevance to the noise estimation of De Haan et al. or Wittig, or a combination of the two.

Further, one skilled in the art looking at all of De Haan et al., Wittig, and Suzuki et al. would not infer or be lead to change the SAD operations of either of De Haan et al. or Wittig.

Rather, at best, a combined system of De Haan et al. and Wittig, estimating the noise of an entire image, may then separately average luminance values of pixels within respective blocks to determine how to encode each separate block or region.

Accordingly, any combination of De Haan et al., Wittig, and/or Suzuki et al. would not set forth the claimed SAD calculation, nor the claimed selecting of a corresponding SAD as the estimated noise of an image.

The claimed SAD calculation based on current averaged luminance values and delayed averaged luminance values is substantially different from either of De Haan et al. and Wittig, as the noise estimation process is simplified.

De Haan et al. and Wittig illustrate that conventional noise calculation is based on SAD of pixel values, whether through pixel to pixel comparisons or pixel to pixel comparisons of one block to another block. Neither De Haan et al. nor Wittig (and especially Suzuki et al.) disclose or suggest basing the noise estimation on averages of those pixel values nor averages of luminance values of those pixels.

Accordingly, it would not have been obvious to modify any of De Haan et al., Wittig, and/or Suzuki et al., alone or in combination, to set forth the claimed invention.

Further, as noted above regarding the actual disclosure of Suzuki et al., the Office Action proposed combination of De Haan et al., Wittig, and Suzuki et al. also would not disclose the claimed SAD calculation or corresponding noise estimation.

Independent claims 6 and 11 include similar allowable features, with differing scope and breadth, and should be similarly allowable. In addition, it is respectfully submitted that claims that depend from claims 1, 6, and 11 are also allowable for their respective features and their dependence from allowable independent claims.

#### IMPROPER REJECTION OF CLAIMS 3-5 AND 8-10

The Office Action on pages 6 and 7 set forth that claims 3-5 and 8-10 are based on the underlying combination of claims 2 and 7, respectively, based on the further disclosure of Wittig.

However, these rejections of claim 3-5 and 8-10 fail to set forth the prima facie obviousness required reason for further modifying the claim 2/7 combination of De Haan et al., Wittig, and Suzuki et al.

The entire disclosure and invention of Wittig is not automatically incorporated into the Office Action proffered combination of De Haan et al., Wittig, and Suzuki et al., as set forth in the rejections of claims 1-2 and 6-7.

Rather, to further modify such a combination of De Haan et al., Wittig, and Suzuki et al., there must be an articulated reason why one skilled in the art would have further modified the combination of De Haan et al., Wittig, and Suzuki et al.

Accordingly, applicants respectfully submit that the rejection of claims 3-5 and 8-10 are improper. A new Office Action meeting the required prima facie obviousness case for the rejection

of claims 3-5 and 8-10 is respectfully requested.

#### IMPROPER OFFICE ACTION REJECTION RATIONALE

In addition to applicants above detailed discussion regarding the teaching of Wittig and Suzuki et al., with regard to the proffered combination with De Haan et al., applicants again respectfully submit that the outstanding Office Action has failed to set forth a prima facie obviousness case for the corresponding combination.

Page 5 of the Office Action, after identifying features disclosed by De Haan et al. and missing from De Haan et al., the Office Action then lists such missing features that are disclosed by Suzuki et al. and Wittig.

After such listing of features the Office Action then concludes:

"It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Suzuki's invention and Wittig's invention in De Hann's invention to provide a more reliable method and apparatus for noise measurement (De Hann (col. 1, lines 49-50) which is a simple substitution of one known element for another to obtain predictable results or is using known technique to improve similar devices (methods or products) in the same way."

Similarly, on page 3, the Office Action first cites KSR as indicating that the relied upon predictable results or simple substitution of elements is a proper rejection rationale. Applicants do not disagree that such rationales may be relied upon, assuming the remaining requirements of a prima facie case are also met.

Applicants had previously indicated that a prima facie obviousness case requires evidence in the record for the reason for the combination, e.g., detailed explanation and support for the relied upon 'predictable results' or 'substitution of elements' rationale. A prima facie obviousness case requires more than just the recitation of the relied upon category of rationale.

However, the Office Action on page 3 particularly indicated that "[i]t is not necessary [for] the motivation or rationale have to be supported by evidence in the record." Applicants respectfully submit that this is incorrect and counter to MPEP, Federal Circuit case law, and KSR.

Briefly, in rejecting claim 1, for example, the Office Action also only cites a general desire from the primary reference De Haan et al. for the features within De Haan et al., and relies upon this desire to incorporate features from Suzuki et al. and Wittig, without any further discussion of why or how such features would accomplish this goal. Rather, the rejections merely recite the secondary reference features and indicate the their combination into De Haan et al. would have

been obvious, as it is concluded that their incorporation into De Haan et al. would further such goals.

See MPEP 2143.01, reciting:

"[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." KSR, 550 U.S. at \_\_\_, 82 USPQ2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).

Thus, to meet a prima facie obviousness case, only a statement of the category of rejection rationale, e.g., the TSM test or combination or substitution for predictable results test, is not sufficient. The articulated reasoning must also be paired with some rational underpinning to support such an obviousness conclusion.

Further to KSR's notation that some rational underpinning is required, in addition to the relied upon conclusion or combination rationale, *In re Lee* sets forth in greater detail the difference between a rejection rationale and 'evidence' supporting that rejection.

"Rejection of patent application for obviousness under 35 U.S.C. §103 must be based on evidence comprehended by language of that section, and search for and analysis of prior art includes evidence relevant to finding of whether there is teaching, motivation, or suggestion to select and combine references relied on as evidence of obviousness; factual inquiry whether to combine references must be thorough and searching, based on objective evidence of record." *In re Lee*, 61 USPQ2d 1430 (CA FC 2002)(vacating a decision by The Board of Patent Appeals and Interferences ("Board") of the USPTO, which upheld an examiner's rejection where the motivation for a specific combination was not supported by the record; the vacated holding of Board was based on the premise that "[t]he conclusion of obviousness may be made from common knowledge and common sense of a person of ordinary skill in the art without any specific hint or suggestion in a particular reference.")

KSR merely indicates that such evidence is not required to be particularly recited in some reference. KSR still indicates that a conclusion without evidence is insufficient to meet a prima facie obviousness case.

Though non-precedent, a more pertinent example of how *In re Lee* has been interpreted can be seen in *In re Beasley*, 117 F. App'x 739, 743-44 (Fed. Cir. 2004), discussing an application of the required evidence in the record, compared to a stated rejection rationale:

The record reflects that the examiner and the Board have managed to find

motivation for substituting one type of memory for another without providing a citation of any relevant, identifiable source of information justifying such substitution. The statements made by the Examiner, upon which the Board relied, amount to no more than conclusory statements of generalized advantages and convenient assumptions about skilled artisans. At least under the MPEP then in effect, such statements and assumptions are inadequate to support a finding of motivation, which is a factual question that cannot be resolved on "subjective belief and unknown authority." *Lee*, 277 F.3d at 1344. Under such circumstances, with respect to core factual findings, "the Board must point to some concrete evidence in the record in support" of them, rather than relying on its assessment of what is "well recognized" or what a skilled artisan would be "well aware." *In re Zurko*, 258 F.3d 1379, 1385-86 (Fed. Cir. 2001). "To hold otherwise would render the process of appellate review for substantial evidence on the record a meaningless exercise." *Id.* at 1386 (citing *Baltimore & Ohio R.R. Co. v. Aberdeen & Rockfish R.R. Co.*, 393 U.S. 87, 91-92 (1968)).

The PTO, perhaps realizing the deficiencies in the record in this regard, provides numerous citations in its brief to specific passages in *Pieters*, *Belser*, and *Doyle* in a 04-1225 valiant attempt to muster substantiation for the Board's findings. We cannot consider such post hoc attempts at bolstering the record in our review for substantial evidence. *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962) ("[C]ourts may not accept appellate counsel's post hoc rationalization for agency action."). Our review must be limited to those grounds relied on and articulated by the Board; otherwise, the applicant may be deprived of a fair opportunity to support his position. See *Lee*, 277 F.3d at 1345; see also *SEC v. Chenery Corp.*, 332 U.S. 194, 196 (1947) ("[T]he court is powerless to affirm the administrative action by substituting what it considers to be a more adequate or proper basis.").

Here, in *In re Beasley*, the Federal Circuit evaluated the previous Office Action rejections, indicating:

Our review of (1) the Jan. 7, 2000 Office Action; (2) the Jun. 14, 2000 Office Action; (3) the Feb. 13, 2001 Examiner's Answer; (4) the Decision on Appeal; and (5) the Decision on Request for Rehearing reveals that the assertions pertaining to the advantages of one type of memory over another that had been advanced by the examiner and the Board for the express purpose of showing motivation for the proposed substitution have been set forth without any supporting citations to relevant portions of either *Pieters*, *Belser*, *Doyle*, or any other authority.

For example, the examiner's allegation in the Jan. 7, 2000 Office Action that "image data stored in the bit map format can be read out rapidly" has been repeated axiomatically throughout the record in justifying the replacement of the CAM in *Pieters*. Neither the Board nor the examiner has identified in the record any source of information—either from the references cited or otherwise—from which they base their comparison of the relative speed advantages of "bit map memories" over CAMs. Similarly, the assertion in the Jun. 14, 2000 Office Action that the "advantage of using . . . bit map memory over . . . conventional memory is well recognized" appears unaccompanied by any indication of its origins.

In adopting the examiner's position, the Board made no effort to substantiate the examiner's assertions by invoking any identifiable authority.

Instead, the Board relied on the examiner's and its own knowledge as skilled artisans. For example, the Board claimed that "the secondary references" suggested to skilled artisans "that if more rapid readout of image data is desired, the bit map memory, rather than the CAM of Pieters, should be employed."

Decision on Appeal at 5-6. Similarly, in dismissing Beasley's restructuring argument, the Board alleged that a skilled artisan would have been "well aware" of the restructuring involved. *Id.* at 6. Under the MPEP provisions<sup>7</sup> in effect at the time, such generalized claims of what "the secondary references" teach and of what the skilled artisan would have been "well aware" fail to satisfy the level of specificity that is required. Cf. *Kotzab*, 217 F.3d at 1371 ("[P]articular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.").

Thus, at least regarding KSR and In re Lee, as well as In re Zurko, the following is noted:

"[i]t is well established that agencies have a duty to provide reviewing courts with a sufficient explanation for their decisions so that those decisions may be judged against the relevant statutory standards, and that failure to provide such an explanation is grounds for striking down the action," in addition, "an agency is not free to refuse to follow circuit precedent." In re Lee 61 USPQ2d 1430, 1434 (CA FC 2002).

Thus, such precedent setting of the above In re Lee, In re Zurko, and KSR are binding in the present case.

Accordingly, the Office Action recited rationale for combining features from the separate references is a findings of law, i.e., a conclusion, without any findings of fact, i.e., support of the relied upon predictability of the simple substitution of elements. There must be specific reasoning explaining why one skilled in the art would combine the references, in addition to the recited rejection rationale category.

Therefore, in addition to the above non-obviousness reasons why one skilled in the art would not have combined the references as suggested in the Office Action, it is further respectfully submitted that the outstanding Office Action is improper by lacking evidence supporting why one skilled in the art would implement such a combination. The statement of what category the Examiner is relying on, e.g., predictable results, is only a conclusion and is not supported by any evidence in the record.

Applicants respectfully request a new Office Action with such required evidence, e.g., particular reasoning, supporting the recited rejections.



CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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